

Date: Fri, 15 Apr 94 02:59:13 PDT  
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>  
Errors-To: Info-Hams-Errors@UCSD.Edu  
Reply-To: Info-Hams@UCSD.Edu  
Precedence: Bulk  
Subject: Info-Hams Digest V94 #417  
To: Info-Hams

Info-Hams Digest                      Fri, 15 Apr 94                      Volume 94 : Issue    417

Today's Topics:

Any experience with doppler rdf (radio direction finders)?  
    ARLB032 Resolution gains majority  
    ARLS019 STS-59/SAREX update  
    callsign.cs.buffalo.edu (2 msgs)  
Daily Summary of Solar Geophysical Activity for 13 April  
    FCC delays and other stuff  
    Freq stds.  
    FT-530 mod (AGAIN!!)  
    mods for th-78a????  
    Need QSL info.  
    wa8ded firmware needed!!!  
What's the best freq for underground radio? (2 msgs)  
    Working AO-21 with TH-78A

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>  
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

-----

Date: 14 Apr 94 22:15:15 GMT  
From: hp-cv!hp-pcd!hpcvsnz!tomb@hplabs.hp.com  
Subject: Any experience with doppler rdf (radio direction finders)?  
To: info-hams@ucsd.edu

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:

: Any system that won't work for that bane of the repeater owner, very  
: brief bursts of interference that kerchunk the machine, isn't going to  
: cut it as a mobile direction finding technique. The switched doppler  
: displays do work for that case, giving at least a general bearing on

: the rosette. Mechanical arrays aren't generally quick enough to catch  
: the burst, and any system that depends on a continuous pure carrier is  
: out the window. (Typically the offender is going to be a late model  
: Motorola repeater that keys while the PLL is still sweeping into lock.  
: Hunting them down seems to be a regular passtime around here.)

Direction finding is certainly part of the passtime. A method that  
also has promise is "fingerprinting," characterizing the brief  
burst in ways that differentiate it from other sources. A local  
repeater here does this; I believe the system is available for  
purchase (see small ads in the back of recent QSTs). If you want  
to get really serious about this aspect of the solution, my  
employer sells an instrument that can time-capture a tremendous  
amount of raw data and allows analysis of the carrier and modulation  
to your heart's content. The carriers and tone modulations have  
distinct amplitude and frequency characteristics as a function of  
time that differ from one transmitter to another, even for the same  
model. (I believe the operator of the repeater mentioned above  
can even lock out responses to particular transmitters based on  
this information. You "kerchunk" a few times, he locks you out,  
and you will need a different transmitter to access his repeater--  
or get your apology accepted.)

Sorry for the drift from the original topic.

-----

Date: Thu, 14 Apr 1994 18:41:06 GMT  
From: ihnp4.ucsd.edu!library.ucla.edu!news.ucdavis.edu!csus.edu!netcom.com!  
marcbg@network.ucsd.edu  
Subject: ARLB032 Resolution gains majority  
To: info-hams@ucsd.edu

ARLB032 Resolution gains majority

ZCZC AG96  
QST de W1AW  
ARRL Bulletin 32 ARLB032  
>From ARRL Headquarters  
Newington CT April 12, 1994  
To all radio amateurs

SB QST ARL ARLB032  
ARLB032 Resolution gains majority

Resolution gains majority

The Amateur Radio Service Joint Resolution, H. J. Res. 199, now has

a majority of the US House of Representatives as cosponsors. On April 11, four additions to the list of cosponsors brought the total to 220, (of which three are non voting delegates).

The four are: Rep. James Talent (R-MO), Del. Eleanor Holmes Norton (D-DC), Rep. Thomas Ridge (R-PA), and Rep. Don Young (R-AK).

The Resolution seeks formal recognition of the value of Amateur Radio to the country, would support Amateur Radio as 'national policy,' and would encourage rules and regulations to facilitate Amateur Radio as a public benefit by encouraging new technologies.

Including Resolution sponsor Jim Cooper (D-TN), the total number of voting sponsors is now 218. There are currently 434 Representatives in the House.

More on the Resolution and the League's efforts in Washington were in April QST, pages 47 to 50.

--

Marc Grant  
home: marcdbg@netcom.com      work: marcdbg@esy.com      Voice Mail: 214-246-1150  
Amateur Radio N5MEI

-----

Date: Thu, 14 Apr 1994 18:42:33 GMT  
From: ihnp4.ucsd.edu!galaxy.ucr.edu!library.ucla.edu!news.ucdavis.edu!csus.edu!  
netcom.com!marcdbg@network.ucsd.edu  
Subject: ARLS019 STS-59/SAREX update  
To: info-hams@ucsd.edu

SB SPACE @ ARL \$ARLS019  
ARLS019 STS-59/SAREX update

ZCZC AS63  
QST de W1AW  
Space Bulletin 019 ARLS019  
>From ARRL Headquarters  
Newington, CT April 12, 1994  
To all radio amateurs

SB SPACE ARL ARLS019  
ARLS019 STS-59/SAREX update

With nearly all of the SAREX school contacts successfully completed, the crew of the Space Shuttle Endeavour may have additional opportunities for random contacts with the Amateur Radio community. There have also been dozens of reports from amateurs who have made successful contact with the robot packet station, W5RRR-1.

As a reminder, all SAREX operation is split. The Shuttle voice and packet downlink frequency is 145.55 MHz. Please, do not transmit on the downlink frequency. The worldwide packet transmit frequency is 144.49 MHz. FM voice transmit frequencies for all areas except Europe are 144.91, 144.93, 144.95, 144.97 and 144.99 MHz. The European voice uplink frequencies are 144.70, 144.75 and 144.80 MHz. Please, only transmit on the uplink frequency when the Shuttle is within range of your station.

Crew opportunities for random contacts will be made on a non-interference basis with other scheduled flight activities and work. Look for call signs N5QWL and N5RAX on 2-meter FM voice.

The Shuttle is scheduled to land on Monday, April 18 at 1612 UTC.

Jim Mollica Jr, N2NRD, reported copying these packet beacons from the Shuttle:

10 April 1994, W5RRR-1>QST Hi from low Earth orbit.. We had a great launch, and the radar lab in our payload bay is working well. We have set up our living and working quarters, and have even had time to get on 2m voice twice. Being in space is GREAT. 73, N5QWL

10 April 1994, W5RRR-1>QST Hello from Endeavour. The Red Team has been on duty today. We are supporting Space Radar Laboratory operations. We have seen a huge dust storm in Africa, and a lot of frozen lakes in Canada. Earth from orbit looks great. We are enjoying the mission and will hand over to the Blue Team in a few hours.

To obtain a QSL, send your report and QSL to ARRL EAD, STS-59 QSL, 225 Main Street, Newington, CT 06111, USA. Include the following information in your QSL or report: STS-59, date, time in UTC, frequency and mode (FM voice or packet). In addition, you must also include an SASE using a large, business-sized envelope if you wish to receive a card. The Orange Park Amateur Radio Club in Florida has generously volunteered to manage the cards for this mission.

The following Keplerian elements reflect the orbit following a retrograde trim burn performed this morning, April 12.

STS-59

1	23042U	94020A	94102.60601196	0.00019765	11068-4	10664-4	0	148
2	23042	56.9943	248.7421	0009326	283.3969	76.6081	16.21184650	526

Satellite: STS-59

Catalog number: 23042

Epoch time:	94102.60601196	(12 APR 94 14:32:39.43 UTC)
Element set:	GSFC-014	
Inclination:	56.9943 deg	
RA of node:	248.7421 deg	Space Shuttle Flight STS-59
Eccentricity:	0.0009326	Keplerian Elements
Arg of perigee:	283.3969 deg	
Mean anomaly:	76.6081 deg	
Mean motion:	16.21184650 rev/day	Semi-major Axis: 6594.4697 Km
Decay rate:	0.20E-03 rev/day2	Apogee Alt: 222.23 Km
Epoch rev:	52	Perigee Alt: 209.93 Km

Thanks to Ron Parise, WA4SIR, of the Goddard Space Flight Center and  
 Gil Carman, WA5NOM of the NASA Johnson Space Center for the  
 preceding elements.

--

Marc Grant		Voice Mail: 214-246-1150
home: marcdbg@netcom.com	work: marcdbg@esy.com	Amateur Radio N5MEI

-----

Date: 14 Apr 1994 12:37:52 GMT  
 From: ihnp4.ucsd.edu!agate!howland.reston.ans.net!vixen.cso.uiuc.edu!  
 newsrelay.iastate.edu!hobbes.physics.uiowa.edu!news.uiowa.edu!  
 panda@network.ucsd.edu  
 Subject: callsign.cs.buffalo.edu  
 To: info-hams@ucsd.edu

In note <Charles.R.Hohenstein.1-130494190325@mac28.lafortune.lab.nd.edu>,  
 Charles.R.Hohenstein.1@nd.edu (Charles R. Hohenstein) writes:  
 >Who maintains the callsign server and how often is it updated? I don't find  
 >myself there, and I have been licensed for a year. This makes me wonder how  
 >up-to-date the other information is.

It is not updated unless someone donates the CD-ROM. There is another calssign  
 server that has newer info. It can be reached at pc.usl.edu 2000. Try that one  
 it even has my correct address on it.

---

-----  
 The opinions in this post are mine and my cat's, not my employer's.  
 scottm@csg.mot.com (Scott F. Migaldi)

-----

Date: 14 Apr 1994 00:04:36 GMT  
 From: sgiblab!swrinde!cs.utexas.edu!howland.reston.ans.net!europa.eng.gtefsd.com!  
 news.umbc.edu!eff!news.kei.com!yeshua.marcam.com!zip.eecs.umich.edu!  
 newsxfer.itd.umich.edu!news1.oakland.edu!@

Subject: callsign.cs.buffalo.edu  
To: info-hams@ucsd.edu

Who maintains the callsign server and how often is it updated? I don't find myself there, and I have been licensed for a year. This makes me wonder how up-to-date the other information is.

-----  
Date: Wed, 13 Apr 1994 21:42:56 MDT  
From: ihnp4.ucsd.edu!library.ucla.edu!europa.eng.gtefsd.com!news.umbc.edu!eff!news.kei.com!yeshua.marcam.com!zip.eecs.umich.edu!newsxfer.itd.umich.edu!nntp.cs.ubc.ca!alberta!ve6mgs!usenet@@  
Subject: Daily Summary of Solar Geophysical Activity for 13 April  
To: info-hams@ucsd.edu

/\

DAILY SUMMARY OF SOLAR GEOPHYSICAL ACTIVITY

13 APRIL, 1994

/\

(Based In-Part On SESC Observational Data)

SOLAR AND GEOPHYSICAL ACTIVITY INDICES FOR 13 APRIL, 1994

-----  
!!BEGIN!! (1.0) S.T.D. Solar Geophysical Data Broadcast for DAY 103, 04/13/94  
10.7 FLUX=073.9 90-AVG=095 SSN=021 BKI=3453 3443 BAI=023  
BGND-XRAY=A1.0 FLU1=4.6E+05 FLU10=9.8E+03 PKI=3454 3444 PAI=025  
BOU-DEV=031,046,071,021,031,050,055,038 DEV-AVG=042 NT SWF=00:000  
XRAY-MAX= B2.4 @ 0342UT XRAY-MIN= A1.0 @ 2011UT XRAY-AVG= A4.1  
NEUTN-MAX= +002% @ 1320UT NEUTN-MIN= -002% @ 0955UT NEUTN-AVG= +0.1%  
PCA-MAX= +0.1DB @ 2235UT PCA-MIN= -0.3DB @ 0540UT PCA-AVG= -0.0DB  
BOUTF-MAX=55346NT @ 0218UT BOUTF-MIN=55284NT @ 1739UT BOUTF-AVG=55326NT  
GOES7-MAX=P:+000NT@ 0000UT GOES7-MIN=N:+000NT@ 0000UT G7-AVG=+077,+000,+000  
GOES6-MAX=P:+135NT@ 1907UT GOES6-MIN=N:-101NT@ 0500UT G6-AVG=+095,+029,-045  
FLUXFCST=STD:095,090,085;SESC:095,090,085 BAI/PAI-FCST=015,010,010/022,015,010  
KFCST=3344 4332 2225 4221 27DAY-AP=032,018 27DAY-KP=4555 4343 4442 3223  
WARNINGS=\*GSTRM;\*AURMIDWCH  
ALERTS=  
!!END-DATA!!

NOTE: The Effective Sunspot Number for 12 APR 94 was 13.9.  
The Full Kp Indices for 12 APR 94 are: 5- 5- 5- 3o 3+ 3- 4- 4-

The 3-Hr Ap Indices for 12 APR 94 are: 37 38 37 17 17 14 24 21  
Greater than 2 MeV Electron Fluence for 13 APR is: 2.5E+09

#### SYNOPSIS OF ACTIVITY

-----

Solar activity was very low. Region 7700 (N09E07) grew slightly in white light, and now shows a modest degree of magnetic complexity. Little activity of any significance was reported during the period.

Solar activity forecast: solar activity is expected to be very low.

The geomagnetic field was at unsettled to minor storm levels. The greater than 2 MeV electron fluence was very high.

Geophysical activity forecast: the geomagnetic field is expected to be unsettled to active the next 24 hours, signalling what should be the end of the disturbance that began 01 April. Strictly unsettled conditions will close the interval.

Event probabilities 14 apr-16 apr

Class M	01/01/01
Class X	01/01/01
Proton	01/01/01
PCAF	Green

Geomagnetic activity probabilities 14 apr-16 apr

A. Middle Latitudes	
Active	30/30/15
Minor Storm	20/20/10
Major-Severe Storm	10/10/05
B. High Latitudes	
Active	25/30/30
Minor Storm	30/20/20
Major-Severe Storm	05/10/10

HF propagation conditions were below-normal over all regions. The long-awaited improvements in propagation should begin to be observed over the next 24 to 48 hours. However, high and polar latitudes can still expect periods of minor signal degradation, particularly during the local night

sectors. All regions can expect below-normal MUFs due to the weak state of the ionosphere and low level of solar ionizing radiation.

#### COPIES OF JOINT USAF/NOAA SESC SOLAR GEOPHYSICAL REPORTS

#### REGIONS WITH SUNSPOTS. LOCATIONS VALID AT 13/2400Z APRIL

-----  
NMBR LOCATION LO AREA Z LL NN MAG TYPE  
7700 N09E07 203 0030 CRO 05 011 BETA  
REGIONS DUE TO RETURN 14 APRIL TO 16 APRIL  
NMBR LAT LO  
7696 S16 096

#### LISTING OF SOLAR ENERGETIC EVENTS FOR 13 APRIL, 1994

-----  
BEGIN MAX END RGN LOC XRAY OP 245MHZ 10CM SWEEP  
NONE

#### POSSIBLE CORONAL MASS EJECTION EVENTS FOR 13 APRIL, 1994

-----  
BEGIN MAX END LOCATION TYPE SIZE DUR II IV  
NO EVENTS OBSERVED

#### INFERRED CORONAL HOLES. LOCATIONS VALID AT 13/2400Z

-----  
ISOLATED HOLES AND POLAR EXTENSIONS  
EAST SOUTH WEST NORTH CAR TYPE POL AREA OBSN  
75 N22W19 N10W31 N10W43 N28W21 238 ISO NEG 007 10830A  
76 S40E54 S40E54 N04W02 N29E45 186 ISO POS 038 10830A

#### SUMMARY OF FLARE EVENTS FOR THE PREVIOUS UTC DAY

-----  
Date Begin Max End Xray Op Region Locn 2695 MHz 8800 MHz 15.4 GHz  
-----  
12 Apr:B2136 U2136 A2145 SF 7700 N08E20

#### REGION FLARE STATISTICS FOR THE PREVIOUS UTC DAY



	C	M	X	S	1	2	3	4	Total	(%)
	--	--	--	--	--	--	--	--	---	-----
Region 7700:	0	0	0	1	0	0	0	0	001	(100.0)
Uncorrelated:	0	0	0	0	0	0	0	0	000	( 0.0)

Total Events: 001 optical and x-ray.

#### EVENTS WITH SWEEPS AND/OR OPTICAL PHENOMENA FOR THE LAST UTC DAY

-----

Date	Begin	Max	End	Xray	Op	Region	Locn	Sweeps/Optical Observations
-----	-----	-----	-----	-----	-----	-----	-----	-----
NO EVENTS OBSERVED.								

#### NOTES:

All times are in Universal Time (UT). Characters preceding begin, max, and end times are defined as: B = Before, U = Uncertain, A = After. All times associated with x-ray flares (ex. flares which produce associated x-ray bursts) refer to the begin, max, and end times of the x-rays. Flares which are not associated with x-ray signatures use the optical observations to determine the begin, max, and end times.

Acronyms used to identify sweeps and optical phenomena include:

II	= Type II Sweep Frequency Event
III	= Type III Sweep
IV	= Type IV Sweep
V	= Type V Sweep
Continuum	= Continuum Radio Event
Loop	= Loop Prominence System,
Spray	= Limb Spray,
Surge	= Bright Limb Surge,
EPL	= Eruptive Prominence on the Limb.

★★ End of Daily Report ★★

-----

Date: 14 Apr 1994 19:00:41 GMT  
 From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!wupost!crcnis1.unl.edu!  
 unlinfo.unl.edu!gbrown@network.ucsd.edu  
 Subject: FCC delays and other stuff  
 To: info-hams@ucsd.edu

An interesting way of looking at the delay problem...if the delay is always 10 to 12 weeks, and is not getting continuously longer, then

the FCC must be keeping up with incoming applications. If they were not keeping up, then the delay would always be increasing. If they are in fact keeping up and just have a backlog, then maybe they should just make an effort to catch up and then they could go back to keeping up, but with less of a delay. Is this too simple to be correct???

Fortunately, I'm just waiting for an upgrade, but I do get tired of being "temporary AA". Then again, my wife is still waiting for her first ticket, and getting impatient...

Greg WB0RTK  
Patient, not complaining, just musing...

-----  
Date: 14 Apr 94 04:01:32 GMT  
From: agate!netsys!pagesat.net!news.cerf.net!ihnp4.ucsd.edu!news.acns.nwu.edu!  
news.eecs.nwu.edu!fidogate.nuars.nwu.edu!nwugate.fidonet.org!  
f747.n115.z1.fidonet.org!Fred.Spinner@ucbvax.berkeley  
Subject: Freq stds.  
To: info-hams@ucsd.edu

How good do you think a network feed, such as  
CBS off of satellite TV would be?

-Fred M. Spinner, KA9VAW  
FMSpinner@aol.com or KA9VAW@AMSAT.org

-----  
Date: 14 Apr 1994 03:32:42 GMT  
From: yale.edu!noc.near.net!chaos.dac.neu.edu!chaos.dac!wy1z@yale.arpa  
Subject: FT-530 mod (AGAIN!!)  
To: info-hams@ucsd.edu

In article <2oh14v\$4na@master.cs.rose-hulman.edu> derry@NeXTwork.Rose-Hulman.Edu  
(John Derry) writes:

Path: chaos.dac.neu.edu!grapevine.lcs.mit.edu!uhog.mit.edu!sgiblab!swrinde!  
cs.utexas.edu!howland.reston.ans.net!vixen.cso.uiuc.edu!usenet.ucs.indiana.edu!  
master.cs.rose-hulman.edu!news

From: derry@NeXTwork.Rose-Hulman.Edu (John Derry)

Newsgroups: rec.radio.amateur.misc

Date: 13 Apr 1994 14:55:27 GMT

Organization: Rose-Hulman Institute of Technology

Lines: 20

Reply-To: derry@NeXTwork.Rose-Hulman.Edu (John Derry)

NNTP-Posting-Host: d211-1.nextwork.rose-hulman.edu

Howdy,

\*\*\*\*\* Here is another request for the FT-530 mod. \*\*\*\*\*

I know it's been beat to death on this group and I previously had it promised to me by a friend, but he lost his information.

So, I'll appreciate your help.

Please reply to me at

derry@nextwork.rose-hulman.edu

or J. H. Derry  
810 S. 34th Street  
Terre Haute IN 47803

Thanks in advance.

GL es 73 de Jack, K9CUN

One more reminder to all:

There are MANY, MANY mods available on the Boston Amateur Radio Club's ham radio archive area on oak.oakland.edu:/pub/hamradio/mods

The directory structure breaks down from here according to manufacturer.

See the 00-Index.txt file in /pub/hamradio

Hope this helps. :)

73,  
Scott, WY1Z

--

```
=====
| Scott Ehrlich           Amateur Radio: wy1z           AMPRnet: wy1z@wa1phy.ampr.org |
| Internet: wy1z@neu.edu   BITnet: wy1z@NUHUB           AX.25: wy1z@wa1phy.ma.usa.na |
|-----|
|       Maintainer of the Boston Amateur Radio Club hamradio FTP area on       |
|               the World - ftp.std.com pub/hamradio                           |
|               |
=====
```

-----  
Date: 14 Apr 94 17:25:25 GMT  
From: agate!netsys!pagesat.net!news.cerf.net!pravda.sdsc.edu!nic-nac.CSU.net!  
charnel.net.csuchico.edu!charnel!olivea!sgigate.sgi.com!sgiblab!swrinde!  
cs.utexas.edu!howland.reston.ans.net!news.@  
Subject: mods for th-78a????  
To: info-hams@ucsd.edu

Does anyone happen to have the mods for the th-78a?

--

Thomas Jay Pachner ==- Music Major, Bassist, Gamer, and Amateur Operator  
University of Wisconsin - Milwaukee  
pachner@csd4.csd.uwm.edu or pachner@alpha2.uwm.edu  
Amateur Call Sign: N9UJJ

-----  
Date: 14 Apr 1994 05:32:25 GMT  
From: ihnp4.ucsd.edu!agate!howland.reston.ans.net!pipex!sunic!news.funet.fi!  
news.tele.fi!news.valmet.com!imukala!ral@network.ucsd.edu  
Subject: Need QSL info.  
To: info-hams@ucsd.edu

Does anyone know who the QSL manager (address) for

--EP2MHB

--YI1EYT

--9N1AW (?)

--XX9TZ

Thanks!

---

# Rauno Lankinen	) internet	ral@tre-vta.valmet.com	#
# OH3NBJ/OH5NBJ	) phone	+358-31-241 2286	#
# Valmet-Tampella Inc.	) fax	+358-31-2412290	#
# P.O. BOX 267	) telex	22117 TAMEC SF	#
# SF-33101 TAMPERE, FINLAND	)		#

-----  
Date: 14 Apr 1994 14:30:23 -0400  
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!news.cac.psu.edu!news.pop.psu.edu!  
ctc.com!birdie-blue.cis.pitt.edu!dsinc!netnews.upenn.edu!msuinfo!news.mtu.edu!  
news.mtu.edu!not-for-mail@@.  
Subject: wa8ded firmware needed!!!  
To: info-hams@ucsd.edu

The club station here at MTU is trying to convert to FBBS, and we need a copy of the wa8ded firmware for a TNC-2. I have seen docs for the TNC-2 version, but they were never bundled with the firmware. The only copies of the firmware I have found indicate that they are for a TNC-1 (different microprocessor).

I think that we are looking for version 2.1. If you have a copy, or know where I can get it, please let me know. I realize that I could get it from TAPR, but they want \$10 and more time than I really have available.

73 and thanks, please reply by e-mail

---

Ken Friberg	Lord bless this, thine Holy Hand
friberg@mtu.edu	Grenade of Antioch, that with it thou
n8pbe@w8yy.#upmi.mi.na	might blow thine enemies to little
icbmnet: too @# \$ far north	bits, in thy mercy.

Geek Code:

GAT d -p+ c+ l- u e(-\*) m+ s !n h f g(+-) w+ t--- r y++

-----

Date: 14 Apr 94 20:52:41 GMT  
From: dog.ee.lbl.gov!ihnp4.ucsd.edu!library.ucla.edu!news.ucdavis.edu!  
dale.ucdavis.edu!ez045506@ucbvax.berkeley.edu  
Subject: What's the best freq for underground radio?  
To: info-hams@ucsd.edu

Question: What would be the best band for radio communication inside of caves. I've only tried 2 meters at 5w and had limited success. Would 6 meters be any better, 10 meters? On two meters I can get reasonable propagation down long tunnels and through a squeeze or two. I'm assuming that the signals are doing a lot of bouncing around off of the rock walls down there. Also, some caves seem to be a lot better than others.

Any one have any experience with underground radio?

Timothy McNulty	N6HFS	tjmcnulty@ucdavis
-----------------	-------	-------------------

-----

Date: 14 Apr 94 23:54:39 GMT  
From: dog.ee.lbl.gov!ihnp4.ucsd.edu!news.cerf.net!ccnet.com!ccnet.com!not-for-mail@ucbvax.berkeley.edu  
Subject: What's the best freq for underground radio?

To: info-hams@ucsd.edu

Timothy McNulty (ez045506@dale.ucdavis.edu) wrote:

: Question: What would be the best band for radio communication inside  
: of caves. I've only tried 2 meters at 5w and had limited success.  
: Would 6 meters be any better, 10 meters? On two meters I can get  
: reasonable propagation down long tunnels and through a squeeze or two.  
: I'm assuming that the signals are doing a lot of bouncing around off of  
: the rock walls down there. Also, some caves seem to be a lot better  
: then others.

: Any one have any experience with underground radio?

: Timothy McNulty                      N6HFS                      tjmcnulty@ucdavis

Next time borrow a couple of 1280 MHz portables. You will be surprised at the propagation even using low power of 100 mw. There is more bounce. Remember you are inside a waveguide. If the radio wave exceeds the frequency of the waveguide there will be attenuation. Those mili-meter waves will travel through a squeeze that is smaller than a large two meter sized squeeze.

Bob

--

Bob Wilkins	work	bwilkins@cave.org
Berkeley, California	home	rwilkins@ccnet.com
94701-0710	play	n6fri@n6eeg.#nocal.ca.usa.noam

-----  
Date: Thu, 14 Apr 1994 14:53:15 GMT

From: usc!howland.reston.ans.net!europa.eng.gtefsd.com!news.umbc.edu!eff!  
news.kei.com!yeshua.marcam.com!zip.eecs.umich.edu!newsxfer.itd.umich.edu!  
nntp.cs.ubc.ca!alberta!@@ihnp4.ucsd.edu

Subject: Working A0-21 with TH-78A

To: info-hams@ucsd.edu

The A0-21 satellite boasts a fine AFC on the uplink receiver. Working the satellite with your TH-78A set to 435.0125 should not be a problem, although as the satellite move farther away from you it may take a half second or so for the AFC to lock on your signal when you transmit.

73

John Boudreau

VE8EV

-----  
Date: Thu, 14 Apr 1994 09:10:19 GMT  
From: ihnp4.ucsd.edu!swrinde!emory!rsiatl!ke4zv!gary@network.ucsd.edu  
To: info-hams@ucsd.edu

References <1994Apr8.220021.29409@Csl.Stanford.EDU>,  
<1994Apr11.144914.25061@ke4zv.atl.ga.us>, <822@comix.UUCP>  
Reply-To : gary@ke4zv.atl.ga.us (Gary Coffman)  
Subject : Re: Any experience with doppler rdf (radio direction finders)?

In article <822@comix.UUCP> jeffl@comix.UUCP (Jeff Liebermann) writes:  
>In article <1994Apr11.144914.25061@ke4zv.atl.ga.us> gary@ke4zv.atl.ga.us (Gary  
Coffman) writes:

>  
>>4) The wider and flatter the phase bandwidth of the radio, the more precisely  
>>it will pass the doppler shift information on to the resolver.  
>  
>True. However, the wider the IF, the better chance a signal on an  
>adjacent channel will mangle the readings.  
>  
>>This latter is a problem when using typical ham receivers, so switch speeds  
>>are typically held down to 2 kHz or less for a 4 pole array. This corresponds  
>  
>Nope. The reason is that the closer the tone is to the center  
>carrier frequency (i.e. lower modulation frequency), the less effect  
>the effects of the carrier being off frequency. Group delay  
>(phase errors) increases toward the IF filter band edges and  
>are flattest in the middle.

What I said.

Re Wizard War, those arrays were \*huge\* fixed arrays to get the  
necessary narrow beam. I don't think they'd be much use in a car.

>Another interesting method of direction finding is to use the  
>same technique as the satellite (forgot name) which monitors the  
>ELT (121.5Mhz) frequency. It uses doppler shift for locating.  
>The satellite follows an exactly known path. A transmitter on the  
>ground creates a doppler shift that changes from high to low as  
>the satellite passes. The rate of change during this transition  
>can be used to locate a line of position.  
>  
>The same method can be done on the ground. I visualize a GPS  
>receiver into a laptop. The received signal and doppler shift  
>are measured exactly while roaring down the freeway. Increased  
>shift means you're approaching the transmitter. Decreasing means

>you're going away. The carrier frequency, doppler shift, direction,  
>and speed are all known. The rest is number crunching.

Your car must be faster than mine. The SARSAT is moving at 5 km/s to get that doppler. Poking along at 0.027 km/s, I'm not going to generate much doppler shift at 2 meters, fractional Hertz. That's not going to pass through a typical amateur receiver, nor are typical PLLs that stable.

Any system that won't work for that bane of the repeater owner, very brief bursts of interference that kerchunk the machine, isn't going to cut it as a mobile direction finding technique. The switched doppler displays do work for that case, giving at least a general bearing on the rosette. Mechanical arrays aren't generally quick enough to catch the burst, and any system that depends on a continuous pure carrier is out the window. (Typically the offender is going to be a late model Motorola repeater that keys while the PLL is still sweeping into lock. Hunting them down seems to be a regular passtime around here.)

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

-----

End of Info-Hams Digest V94 #417

\*\*\*\*\*